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Abstract

REMARKS

ON THE

Dangers and Duties of Sepulture:

OR,

SECURITY FOR THE LIVING,

WITH

RESPECT AND REPOSE FOR THE DEAD.

BY A FELLOW
OF THE

MASSACHUSETTS MEDICAL SOCIETY.

Jacob Bigelow

Non defunctorum causâ, sed vivorum inventa est sepultura.

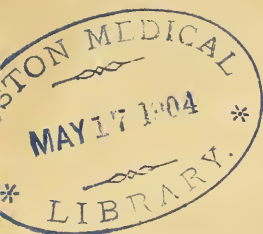
SENECA.

BOSTON :

PUBLISHED BY PHELPS AND FARNHAM,

No. 5, Court Street.

1823.



DISTRICT OF MASSACHUSETTS, TO WIT :

District Clerk's Office.

BE IT REMEMBERED, that on the thirteenth day of June, A. D. 1823, in the forty-seventh year of the Independence of the United States of America, Phelps and Farnham, of the said District, have deposited in this office the title of a book, the right whereof they claim as proprietors in the words following, *to wit* :

“Remarks on the Dangers and Duties of Sepulture: or, Security for the Living, with Respect and Repose for the Dead. By a Fellow of the Massachusetts Medical Society.

Non defunctorum causâ, sed vivorum inventa est sepultura.

SENECA.”

In conformity to the act of the Congress of the United States, entitled, “An act for the encouragement of learning, by securing the copies of maps, charts and books, to the authors and proprietors of such copies, during the times therein mentioned:” and also to an act entitled, “An act supplementary to an act, entitled, An act for the encouragement of learning, by securing the copies of maps, charts and books, to the authors and proprietors of such copies during the times therein mentioned; and extending the benefits thereof to the arts of designing, engraving and etching historical, and other prints.”

JOHN W. DAVIS,

Clerk of the District of Massachusetts.

TO THE

HON. JOSIAH QUINCY,

Mayor of Boston.

SIR,

To whom can these remarks, in favor of health, be inscribed with so much propriety as to him, who is pursuing the best means to secure and perpetuate this great blessing?

"In seasons of danger, the sons of fortune can take refuge in purer atmospheres; but necessity condemns the poor to remain and inhale the noxious effluvia.

"In relation to city police it is not sufficient that the law, in its due process, will ultimately remedy every injury, and remove every nuisance. For, while the law delays the injury is done. In these cases prevention should be the object of solicitude, not remedy." Prevention is indeed the best part, not only of a city police, but of practical wisdom every where.

This would be true even if cure were certain; but it is not: remediate measures are slow and imperfect in the best hands,—prevention only is perfect; this only can save the pain of suffering, the exhaustion of funds, and the risk of life.

Because the fatal endemic has not yet broken forth from our church and city inhumations, shall we cherish and give energy to the cause of disease, till we are overwhelmed by its

sudden development ; or, are we to expect that the natural laws, which prevail in Europe and the other quarters of the globe, shall be suspended or reversed in America, to sanction an abuse, for which our age and religion furnish no apology ?

As long as the discernment of the people shall enable them to select, and their patriotism induce them to prefer men of talents and integrity for their rulers,—so long not only the City, but the State and the Empire will be safe.

I mean men who deliberate with care, and without prejudice,—men who, having found the path of duty, steadily pursue it under the admission of an equitable responsibility, watchful to secure the approbation of their own minds, in the fear of God, and in no other fear. Men like these will disregard the oblique and pertinacious spirit of private interest, of party feeling, calculation and effort ; they will deserve, and—I hope it may be added—they will receive the confidence, respect, and support of their constituents.

But if in any case it must be otherwise, infinitely better, happier, and nobler, and more consistent is it for such men to go out of office, because they have done their duty, than for any one to stay in, because he has neglected it.

Will you accept, Sir, the esteem and respect of

THE AUTHOR?

INTRODUCTION.

BOSTON, 1823. During the last year, the first of our new Charter, permission was given by the city government to deposite dead bodies under two churches in the metropolis of New England! No *privilege* of this kind, if it can be called one, had been previously granted, with one exception at South Boston, for more than sixty years.

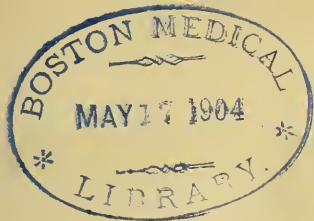
It was stated by eight physicians, or by other persons as petitioners for leave to place a number of bodies under St. Paul's Church, "that this use had been made of churches by the consent of almost all Christian nations,—that there was no reason whatever to apprehend any evil to the public from this measure, and that observations made of late years had afforded satisfactory evidence, that fevers arising from putrid effluvia are the result of the decomposition of *vegetable* and not of animal matters."

Since this liberty to establish cemeteries under one or two churches has been given, the proprietors of some other churches are soliciting the same permission.

Where then will this evil terminate, if it be not checked in the present stage of its progress, before it is strengthened by indulgence, and fortified as a prescriptive right? This revival or continuance among us of an old error, after many of the great cities of Europe have seen and felt cause to forbid and abandon it, is viewed with deep regret by a great proportion of our society, and probably by

every impartial inquirer, who has so far attended to the subject as to understand it.

These justly regard it as not only injurious to the public health, but as opposed also to many of those local improvements which the present epoch invites us to contemplate, and which our peculiar and favored situation would enable us to accomplish. It is the purpose of this essay to examine how far the facts assumed by the friends of this retrograde step in the march of science and civilization, is supported or contradicted by medical testimony, general history, and common observation. The author, however, will try to avoid making too large a book, in this book-making age, to be conveniently read by every enlightened and patriotic citizen of Boston, who feels but half the interest which the important bearing of this question on the prosperity of the community—both justifies and demands.



REMARKS, &c.

Sepulture.

OF the various modes of burial which have prevailed in the world, it was CICERO's opinion that *inhumation* was the oldest: and the records of history undoubtedly corroborate the notion. *Burning* and enclosing the remains in urns, were perhaps never found expedient, till national animosities had given rise to inhuman treatment of the dead.

The common consent of mankind has concurred in the propriety and decency of interment; it is a natural act, inspired by humanity; a practice which has been continually observed by enemies in time of war, and but rarely denied in any country, but to those who have violated the laws of God or nature. The duty of sepulture and instances of the discharge of it continually occur in Scripture. From the profane writers of antiquity we learn the practice of heathen nations; and not only from *their* authority, but from daily observation, we find the high raised *Tumulus* continued a mark of respect among the living, and a signal honor among the dead, in every age of which we have any record.

Barrows or mounds are the most ancient sepulchral monuments in the world: and their contents are as various as the different people who have occupied the globe, or

the different circumstances by which they have been distinguished. The pyramids of Egypt are but barrows of a more solid material and stupendous size: and in Great Britain the church-yard hillock of the present day is but a relic of their universal prevalence. Among the Egyptians, the body, having been embalmed by persons legally appointed to the exercise of the profession, was returned to the relations, who enclosed it in a case of wood made to resemble a human figure, and placed it against the wall in the repository of their dead. From the best information we possess, it appears that, both among the Jews and Heathens, the place of interment was usually *without* the city. Such also was the case with the Athenians, the Smyrnæans, the Sicyonians, the Corinthians and the Syracusans. The examples of NUMA and SERVIUS TULLUS prove that the Romans buried without the city, and it was a special privilege granted by the Senate to particular persons, that they should be buried within the walls; and the Jews, at least in the latter days of their existence as a nation, as we learn from the instance of LAZARUS, the widow's son at Nain, and the dead that were raised at the crucifixion, observed the same place of burial.

The Lacedæmonians, however, buried within it. It had been an idea universally prevalent, that the touch of a dead body conveyed pollution; and LYCURGUS, the legislator of Sparta, was ambitious to remove the prejudice.

He not only introduced the custom of burial within the city, but erected monuments near the temples, that the youth might be trained from their infancy to the view of such objects, nor shudder at the spectacle of death.

The introduction of Christianity made a great alteration in the mode of burying the dead. The believing Romans betook themselves to the use of sarcophagi, a sort of stone tombs or coffins.

The Romanized and converted Britons would naturally do the same. The Saxons, as the successors of the Britons, inclined from the first to adopt their practices.

And after the arrival of St. AUSTIN in Great Britain in 596, and the consequent conversion of the nation, coffins, as well as the mode of placing the body to the east, universally took place. Among the primitive Christians burying in cities was not allowed for the first three hundred years, nor in churches for many ages after; the dead bodies being first deposited in the atrium or church-yard, and porches and porticoes of the church.

On the introduction of Christianity into Great Britain, a regular form of disposing of the dead took place. The reason alleged by GREGORY THE GREAT for burying in churches, or in places adjoining them, was that their relations and friends, remembering those whose sepulchres they beheld, might thereby be led to offer up prayers for them. Hence too that striking and solemn address, which marked the epitaphs of the monkish ages: *Orate pro anima miserrimi peccatoris*,—Pray for the soul of a most miserable sinner. *Gregory's* reason was afterwards transferred into the body of the canon law.

To this superstition, and the profit arising from it, we may ascribe the original of church-yards. In the eighth century the people began to be admitted into them, and some princes, founders and bishops into the church.

This practice, first introduced into the Romish church by *Gregory the Great*, was carried over to England by CUTHBERT, Archbishop of Canterbury, about the year 750: and the practice of erecting vaults in chancels and under the altars, was begun by LANFRANC, Archbishop of Canterbury, when he rebuilt the cathedral there, about 1075.

From this time the matter seems to have been left to the bishop. Contrary to the spirit of religion, and the

general usage of the Christian church during the five first centuries, says a French writer, the priests arrogated to themselves the right of being buried in the temples, and claimed this as one of their privileges.

This claim was admitted by several councils, contested by others, attacked and defended by various writers, and at length almost every where respected in Europe.

The pious individual, who had erected a chapel, was permitted to be buried in the holy place; the choir was destined to receive the bodies of the priests; and the monks were repositied under the immense galleries of their convents.

When the physicians called the attention of government to the danger of depositing the dead within the cities,—the ecclesiastics demanded their ancient privilege; and a decree of the Parliament of Paris, in 1765, permitted them to be buried in churches. After some time, however, the priests, listening to a more enlightened piety, relinquished a right which was accompanied with so many dangers. By this time it had been demonstrated, that serious inconveniences and frightful accidents had resulted from a violation of the older custom of burying without the city, and at a suitable distance from the habitations of the living. Physicians every where raised their voices against this appalling custom of city and church inhumations. For a long time they had noticed that gravediggers died early, and they informed the magistrates of several instances of this, which had fallen under their observation. Among the most zealous of the correctors of this abuse, should be named HAGUENOT, NAVIER, and MARET, of France; and SCIPION PIATTOLI, of Italy. The latter was charged by a Duke of Modena to investigate the dangers of sepulchres in cities, and had the honor of being translated by VICQ-D'AZYR, at the solicitation of D'ALEMBERT.

It is now admitted in many parts of Europe, that city and church burials are capable of destroying the purity of the surrounding air and water ; and of producing not only single deaths, but of originating infectious endemics.

Better humanity and better science have at length triumphed in France ; and since the year 1775, all burying in cities and churches has been prohibited.

This important measure of police has been so rigidly observed, that in 1810, an archbishop of Aix solicited in vain to be repositied in his own cathedral church. May this prudent severity never be relaxed : a single exception would increase the difficulty of preserving it.

WHAT PROOF IS THERE THAT PUTRID FLESH EVER DID ANY
HARM ?

RAMAZZINI assures us that gravediggers are short-lived, the vapors they breathe soon undermining their health. The same author, in a celebrated work on the diseases of artizans, enumerates the several disorders which usually attack those persons who empty necessities and common sewers.

Paré saw three robust young men die in Paris in a foul ditch they were clearing in the suburb Saint-Honoré. G. HANNENS reports a similar fact, which occurred in the dutchy of Holstein ; four persons died in a well, which had been long closed, and whose water had become corrupted. A child fell into a pit in Florence full of dung, where it soon perished. A person, who ran to the assistance of this child, likewise perished.

SENNERTUS speaks of a disease called *Hungaric fever*, which arose from the armies of the emperor, and thence spread through all Europe, as an infectious malady. Malignant fever, and infectious or endemic dysentery, have often arisen from crowded and filthy camps.

PRINGLE has seen the same thing happen in badly managed hospitals and prisons.

TISSOT, in his popular work, called "Advice to the People," remonstrates loudly against the dangerous custom of placing dead bodies under churches.

Every body knows, says Sig. PIATTOLI, that animal exhalations, and especially those emanating from putrid human bodies, are exceedingly active, and even deadly.

The putrid effluvia from a dead part, even in the living system, is well known to be deleterious. The emanations from sick bodies sometimes possess the same character and power.

The blood of a certain woman having malignant fever, diffused so intolerable an odor, that the surgeon and all the attendants became faint and insensible from breathing it. Of many instances of this fact, which might be cited, I content myself with one—the *hospital gangrene*. The reader is desired to bear in mind that this disease is the result of putrid effluvia from living subjects, and that these effluvia or gases are less poisonous than those which ascend from the same bodies deprived of life, and in a fermenting or putrid state. By hospital gangrene is understood a peculiar and morbid state of suppurating wounds, in which their surface is covered with a greenish and glutinous substance. This condition of wounds is such, that the soft parts generally soon fall into a state of complete mortification and disorganization, followed by malignant fever and death.

The air is injured by the breath and perspiration, even of healthy persons, when crowded together. When the air of any apartment is thus more or less deprived of its vital properties, and further injured by the emanations from a number of suppurating wounds and ulcers, the atmosphere becomes gradually, and sometimes rapidly, so

bad as to induce hospital gangrene in every wound, however healing and healthy before. In this state of local death, with putrid fever, the mortality has, in various instances, been frightfully rapid. All these effects are from putrid and other *animal* exhalations.

Again,—DIODORUS SICULUS speaks of pestilential maladies from the putrefaction of different substances. St. AUGUSTIN mentions a great number of animals thrown up on the borders of the ocean, where they produced, after becoming putrid, an extensive pestilence. Egypt is ravaged almost every year by malignant fever. The retiring waters of the Nile leave behind them multitudes of aquatic insects, which, corrupting, poison the surrounding air.

FORESTUS and JOHN WOLF report that various fish thrown up by the waves, on the border of the sea, fell into a state of putrefaction, and occasioned a severe endemic disease. The corruption of numberless grasshoppers, (*cigales*) in Ethiopia, has at different times given rise to a fatal endemic.

Paré says that in his time the putrefaction of a whale produced a pestilential disease in Tuscany.

LANCISI writes that a putrid ox occasioned the death of an unfortunate traveller in Pisaro.

LUCAN speaks of a wide-spreading disease, which ravaged POMPEY's army, near Durazzo, which originated from the putrefaction of horses that had been killed and left uncovered.

AM. MARCELLINUS also mentions a great desolation in the camp of CONSTANTINE THE GREAT, occasioned by the same imprudence.

ARISTOTLE advised ALEXANDER to withdraw immediately from the defeat of DARIUS at Arbelles, to avoid the malignant effects of the dead bodies. *Paré* reports that in 1572 a pestilential fever extended nearly ten leagues

around in Guiana ; it was caused by the putrid exhalations from a well, into which several dead bodies were thrown two months before.

In 1746, three men died successively from attempting to bury a corpse under a church in Montpellier ; a fourth was withdrawn merely in time to be saved, after a severe sickness. The clothes and body of this man exhaled, for several days, a cadaverous and sickening odor.

M. BERARD relates the following fact. A large fat man had been superficially buried in the ground. The offensive gases, which soon arose from the putrid body, obliged the neighboring inhabitants to remove it. Three gravediggers undertook the work ; two of them becoming sick at heart, and vomiting, gave up the enterprize ; the third,—determined to finish it,—persevered, fell sick, and died in ten days after.

At Riom, in Auvergne, the earth of an old cemetery was removed, in order to embellish the city. In a short time after a disease broke out, which carried off a great number of persons, the mortality being greatest near the cemetery.

The same event occurring six years after at Ambert, in the same province, gave rise to an endemic sickness.

Dr. ROBERTSON says “the extraneous matters, most commonly found in the atmosphere, are effluvia of different kinds, which arise from animal and vegetable matters under different states of existence ; they are likewise most powerful in their effects, and produce the most deleterious consequences, by altering the nature of the climate. Of these, the most baneful arise from the decomposition of *animal* substances, or such as are emitted from the bodies of people laboring under particular diseases.

“DIEMERBROECK, speaking from his own experience, says that the plague is not caused by famine, nor was it generated by the putrifying remains of eight thousand

Germans, beside horses, who were left slain on the plain of Juliers, in summer, 1642; but a very bad malignant fever took its origin from this cause: and he likewise mentions that a similar disorder immediately appeared, after several engagements between the Austrians and Swedes, owing to want of attention in burying the dead. In PERE COTTE's Mineralogy, he gives the history of a gravedigger at Montmorenci, in 1773, who by accidentally opening the coffin of a person buried a year before, was suddenly killed by a vapor that issued from it. In the same year, too, he mentions that there arose a vapor from the coffin recently buried, during the time of a funeral, and of one hundred and twenty persons who were present, one hundred and fourteen took ill of a putrid and venomous fever. A similar occurrence took place in West Linton some years ago: a school-boy, getting into a new-made grave, set about to open the projecting corner of a coffin, which, so soon as he had penetrated, there issued a strong nauseous smell, on which he exclaimed that he was suffocated; he revived on being taken out of the place, but fell immediately ill of a petechial fever, of which he died on the seventh day; a similar fever was communicated to some of the people who had attended him during his illness. Sir JOHN PRINGLE gives an instance of a severe malignant fever, with sunken pulse and stupor, having occurred in the ward of a hospital, where a man lay ill of an extensive mortification of his limbs. These fevers seem to have been occasioned by the respiration of a gas of a nature similar to that which the gravediggers, employed to clear the burying-grounds belonging to the church of the Innocents in Paris, were so cautious in avoiding, and of whose deleterious effects they gave many instances to the physicians sent by the government to superintend the operation. It is likewise extremely pro-

bable, that a vapor, allied in its properties and effects to this gas, gives occasion to the frequency of typhus among people exposed to the effluvia arising from putrefying animal and vegetable matters; as in the narrow lanes of crowded cities, farm-yards, burying-grounds, and some manufactories.

“ARNOLDUS DE VILLA NOVA records the history of a pestilence, that arose in his time, in consequence of the sinking of a mountain near Naples, whence there issued a loathsome odor, and swarms of disgusting insects and serpents. But disorders, resembling the very worst forms of epidemics, have frequently appeared without the immediate application of one specified cause, but which seem to have been owing to the combined influence of several agents, and to be afterward propagated by the emanation of a peculiar matter, generated in the course of the disorder. In this way, fevers of the most malignant description are generated on shipboard, in jails, hospitals, besieged towns, and in every situation where people are much crowded: these originate, in the first place, from want of fresh air, over-exertion, inactivity, sloth, and bad diet. In such circumstances the effluvia, that are continually rising from the bodies of men, become accumulated, and in consequence their constituent parts form new combinations, highly pernicious to health. From this cause *Diodorus Siculus* records an instance of pestilential fever having broken out in Athens during a siege, the bounds of the city being too confined for those who, with their moveable property and cattle, had taken refuge in it. There are also instances of similar disorders being generated in similar circumstances, in every remarkable siege; and we refer to the writings of ancient and modern historians, and to the general works on this branch of medicine, for other melancholy proofs of the same nature. By the virulence

of accumulated exhalations, we can comprehend how many people, ill of a sporadic or endemical disease, frequently give origin to a different disorder, of a regular and defined description, which is afterward propagated by the evolution of its own peculiar matter or infection.

“The sources from which matters arise, fitted to occasion endemic diseases, are so many and so various, that probably but a few of them are hitherto discovered; the mode of their action being however in every instance known to be similar, they may therefore be included in one or other of the following orders :

“First. The cause, perhaps, most immediately inimical to the living body, are the effluvia arising from the putrid remains of *animal matters* in a certain state of decay. This virus is always in the form of gas, and has its force seemingly concentrated, by being kept in contact with matters from which they have emanated. It is to the effects of this gas, that people incautiously respiring it, as gravediggers, are sometimes suffocated in places where it abounds. In a less virulent degree, either in consequence of the state of the weather, or other circumstances, it occasions epidemical fevers, &c. It is doubtful whether the effluvia from decaying vegetables, mixed with the former, adds any thing to its virulence: a contrary opinion is rather to be inferred. However, when these are united by a certain quantity of aqueous vapor, as in the exhalations from marshes, there can be no doubt that very dangerous diseases are produced; and it is generally in consequence of the influence of animal and vegetable effluvia, combined in this manner, that the greater part of the endemic diseases of tropical climates are to be ascribed.

“The second source that gives rise to matters which produce general epidemic diseases, is an accumulation of the usual exhalations of the living body. These being con-

fined within a limited space, enter into new combinations, generating a matter of the most noxious properties. This appears likewise in an aëriform state; and there are frequent instances of its having almost instantly deprived people of life. This appears from the relation we have of the Black Assize at Oxford, and the dreadful sufferings of those confined in the black hole at Calcutta.”*

With all this evidence, and a vast deal more of the same character, before the public, a number of physicians, in their Letter to aid the petition for leave to deposite dead bodies under St. Paul's Church, express the following opinion, “that observations made of late years have afforded satisfactory evidence, that fevers arising from putrid effluvia are the result of the decomposition of *vegetable* and not of animal matters.” The great authority on which this opinion is founded, if I am rightly informed, is Dr. BANCROFT;† and for this reason I am desirous that the doctor should speak for himself. He says, p. 103, “I know indeed that masses of animal and vegetable matters, and especially the *former*, while undergoing putrefaction, or other modes of decomposition, as in privies, &c., may give out vapors so condensed and noxious as to cause asphyxia, and sometimes almost immediate death, to those by whom they are inspired.” Again, p. 104, “Though noxious vapors should result from those fortuitous and ever-varying collections of unclean or putrefying matters, commonly denominated filth, which, as in the instance of marsh effluvia, may pro-

* Natural History of the Atmosphere, and an Essay on the Causes of Epidemic Diseases. By Henry Robertson, M. D. Edinb. 1808. 2 vols. 8vo.

† An Essay on Yellow Fever, &c. by Edward N. Bancroft, M. D. &c. Lond. 1811.

duce diseases, including *fever* ; yet the diseases so produced will be incapable of exciting similar diseases in other persons, and will therefore be destitute of the most essential property of contagion."

I fully agree with Dr. *Bancroft* that putrid flesh never produced *contagion* ; I only contend that they do produce sickness and death, which Dr. B. does not deny ; and this surely is enough for every practical purpose of caution and prevention.

Fortunately a uniformity of medical opinion is not requisite in order to determine the character of the gases emanating from putrid animal substances.

That they frequently prove fatal is already decided, by the common sense and common experience of mankind, since human bodies have been placed under churches and in cities.

It is the *general* opinion, too, that these poisonous gases produce *fever* ;—but it is useless to spend words or time on this point ; for if it be admitted, as it is, that they destroy life, it is altogether immaterial to the victim, his friends, and the public, whether the fatal disease assume the *form* of fever, or any other form, or whether it be ataxic, without any regular form at all.

Perhaps the Letter only meant to say, that no injury would result from depositing bodies under the church alluded to, because the bodies were to be so secured that putrefaction would not take place, or if it did, that the putrid effluvia would be confined within the coffins or tombs. The answer to this is, that it is exceedingly difficult to prevent putrefaction in our summers, and still more so if a church is to be heated by a furnace under the floor ; and if putrid gases are permitted to be extricated, they are so subtle and penetrating, that it is next to impossible to confine them, if the body is ever to

be moved ; and if these gases, from any accident, should escape, they will be the more active and mischievous in consequence of their long confinement and concentration. Admitting for a moment that these bodies under St. Paul's Church would be harmless while they remained without being moved, can it be certain that no change or accident will ever happen to the building, or to the bodies under it, situated as it is amidst the revolutions of a busy population ?

Supposing again, that the burials under this church should never prove injurious to health ; the example has already done this essential evil—it has led the proprietors of other churches to make the same request,—and what the effect of granting these petitions would be, let London, Paris, Vienna, and fifty other European cities, who have abandoned the practice after trying it, reply.

It is well known that in certain years and seasons, there is something in the atmosphere we breathe, which predisposes the human system to yellow fever, typhus, or to some other diseases which destroy life. Individuals and communities may ordinarily escape these maladies, if no local exciting cause exists. This local cause, cooperating with the atmospheric morbid tendency, is sufficient to unfold the disease. It is the business therefore of city police, and of health regulations, to *prevent* or remove these local causes ; to prevent what can be prevented, and to remove the residue.

What better contrivance to generate yellow fever, for instance, was ever set up than what was permitted to exist unmolested last year in the city of New York ?

Take for the focus of this infection the grave-yard of Trinity Church, saturated with dissolved semi-liquid human flesh, oozing from every pore, and the incumbent atmosphere filled with noxious effluvia, concurring with the air of the city, contaminated by unexampled quantities

of smoking filth, of fermenting, offensive animal and vegetable substances. The event was what might have been predicted; it was indeed foreseen with frightful apprehensions, which were but too fully realized.

There is no rational, no scientific view of the means of preserving health,—none which experience can justify or approve, that does not imperiously call for *cleanliness*, personal, domestic, and civic.

Whoever creates or tolerates a local source of atmospheric impurity, in the same proportion, hazards the introduction or spreading of an infectious endemic disease, of which yellow fever is an instance.

In opposition to all this, it may be urged that sickness and death have never yet arisen from domestic interments* in Boston. But shall we continue to transgress merely because we have not yet suffered for our imprudence? Will not the same cause, when sufficiently concentrated, produce the same disasters here as elsewhere? or is that succession of events supposed to be connected as causes and effects to be severed, in order to make a way for our escape?

I have received certain information respecting the present state of some churches in this city, under which dead bodies are entombed, which I am not disposed, if at liberty, to publish. †

There may be an apology, or there may be no need of one, for beginning a custom, which, after a time, it would be criminal to continue.

When the first Primate, whether of the Romish or English church, asked leave to be deposited under the

* By *domestic interments* is meant, burying in cities, churches, or any where else, so near the residence of the living as to poison the water they drink, or the air they breathe.

Cathedral of his own construction, it would be uncharitable to imagine that he intended by this to offend the senses, or to injure the respiration of his surviving friends.

But we, who know that this usage has not only impeded but permanently suspended the respiration of scores—may I not say hundreds?—of our race, can *we* make the same request without incurring the imputation of misanthropy? There may be times when it would be a base dereliction of a noble principle, not to risk our life in its defence; but will any sound mind take this hazard without some correspondent obligation of duty, or the prospect of some adequate future benefit?

In a doubtful case, it may be well to look a little into the origin, effects, and termination of a custom, before we adopt it.

What were the causes which led to city and church interments? I cannot find any thing better than superstition, pride, and avarice. If these were the causes, the results have been as good as might have been expected.—In the Romish church the living assemble at the place of interment to pray for the repose of departed souls. It was therefore convenient to have the dead bodies deposited near the living, contiguous to churches, whither their sacred offices frequently carried them. By and by, some founder, prince, ecclesiastic, or public benefactor, asked leave to be buried under the church he had built; it was granted, and others became desirous of the same favor and distinction, till the civil authority, admonished and afflicted by the calamities which resulted, found it necessary to prohibit this ill-placed, ill-judged, and dangerous accommodation of the dead, so much opposed to the well-being of the living.

Even to this day the passion for being repositied among the devout and the great, goes with some of us to the

grave, and after this our friends continue it for us and for themselves. In Lima every body is buried without the city; but the priests take care to have a separate cemetery for their own flesh and bones, that they may not lie and decay in the vicinity of common corpses. In Venice and Constantinople the dead are all deposited without the city.

The trade of selling to rich strangers the privilege of being buried under a church, or in a city, has sometimes been too profitable to be readily resisted by restricting canons and ordinances.

WHY putrid flesh is capable of producing all this mischief, will more clearly appear, if we attend a little to the process and effects of

Putrefaction.

AFTER life ceases, animals and vegetables, abandoned to the laws of chemical agency, are decomposed into their constituent elements.

This disorganization is the result of a chemical process, called fermentation in vegetables, and putrefaction—or putrefactive fermentation—in animal substances.

From both these classes of bodies, when putrid, many gases are evolved, and being vaporized by heat, are blended with the atmosphere.

These exhalations ascend from every collection of impure materials, especially from common sewers, necessaries, waste-wells, hospitals, foul ships, prisons, graves, tombs, cemeteries, &c., and even from crowds of people in health.

These products of putrefaction derive their importance from their becoming the source of those endemic fevers and other diseases, which are the severest scourges of populous places.

This subject engaged the attention of several sessions of the Royal Academy of Arts in Paris, between the years 1770 and 1780, and occupied the pens of Messrs. CADET DE VAUX, GARDANE, PORTAL, HALLE, and of others.

Sulphureted hydrogen is one of the most virulent of these gases.

According to the experiments of Messrs. DUPUYTREN and THENARD, air, containing but one part in a thousand of this gas, killed birds instantly, when plunged into it.

The same authors assert, that when this gas is inspired in doses not sufficient to destroy life, it suspends breathing for a time, which afterward becomes laborious. The power of voluntary motion and of intellect is greatly impaired, and the sufferer returns to life and health only after a long time, and with much difficulty.

This gas often destroys life almost without the form of disease.

In the summer of 1803, all the laborers in a coal mine near Valenciennes were made sick by this gas; the prominent symptom of the complaint was atony, or a loss of vital power. This gas is capable of destroying life by being absorbed through the pores of the skin. Such is one of the gases arising from putrid flesh. NYSTEN.

Another French *savant* makes the following assertions. The putrid gases, which arise from corrupt *animal* substances, are the most injurious to the health of man. If they are abundant, they produce asphyxia, which is apparent death, often ending in the reality. If they are more divided, they act in a manner not less dangerous, only less prompt, on the living economy.

Less concentrated, they produce external diseases—as carbuncle, malignant and gangrenous pustules; internally they give rise to putrid *fever*, and to typhoid, or nosocomial fever. The pestiferous gases originating from putrid

flesh, tend to generate in the human system morbid changes similar to those from which these gases emanate.

They infuse into the torrent of pure blood the germes of those putrid diseases, to which a sound system soon becomes prone in a vitiated atmosphere. MERAT.

I like to mention these names, because they are known, and cannot be set at naught; and if the reader will recollect that I have eight names to oppose, I trust he will excuse me for rallying as many on the only safe, rational, or defensible side of the question.

M. FODERE, speaking of the effects of cemeteries, says, When I reflect on the multiplied evils which have arisen from the proximity of the dead, I draw two conclusions; the first is, that human safety is often disregarded, because a principle of disease and death, though certain, is not always followed immediately by its natural effects; and secondly, that since the introduction of Christianity, it was not till the middle of the eighteenth century, that the public attention was effectually drawn to the correction of many abuses.—The piety of our ancestors led them to cherish the lifeless relics of those who had been constant in the faith, especially after the opinion became established, that these remains partook of the sanctity of the faithful. Influenced rather by feeling than reason, they could not admit without horror, the idea of the destruction of the dead, after the manner of the unbelieving nations. They accordingly placed their dead in churches and in cloisters, or as near as possible to the churches. They wished to approach the dead still nearer; and the emblems and forms of worship having assumed a tone altogether gloomy, they dug out subterranean churches, on a level with the tombs, to which they repaired at certain periods of the year. About the middle of the last century, people began to reason more justly on the catastrophes which

had arisen from this practice. Burgundy was the first theatre of these misfortunes.

Some putrid exhalations escaping from a tomb, were diffused through a church in Saulieu, and infected sixty-six children who were in it, so that thirty-four of them perished, as well as the curate and vicar. The same year the moving of several coffins in a village occasioned a malignant fever, of which fifteen peasants died, and several curates, assembled there, became dangerously ill. But it was particularly the cemetery of the Innocents in Paris, which some years after decided the government to adopt the general measure of prohibiting all further burials in churches and cities. The police of Paris had incessantly, for forty years, received complaints from the inhabitants, who lived near this cemetery. They blamed this focus as the cause of a number of diseases, which was depopulating their quarter of the city, and as the cause of the speedy corruption of their meats, broth, and milk. The cellars in several houses near this place had contracted such a degree of infection, that they could not be entered. Counterwalls were erected to intercept any communication of the earth or water of the cemetery; these were soon saturated with the same fetor, and a month after the cellars had been purified by ventilating stoves, they had become as foul and intolerable as before.

At length, in 1780, the Faculty of Medicine of Paris were consulted on this nuisance; it was pronounced to be the cause of all these evils, and ordered accordingly to be removed.

This example proves, that the earth of cemeteries in time becomes so filled with putrid matter and effluvia, as to endanger the health and the life of all those exposed to the atmosphere of these dépôts of corruption. This case should be every where known, to every city and every

village, to induce the people generally to conform to the law for removing all inhumations so far from the living, as to prevent the air or water from being injured by their ascending or descending poison.

I have seen an instance of fatality from the want of sufficient earth in a burial-place. There is a cemetery on a rock, where stood ancient Nice; here is a scarcity of earth. In 1801, I visited this place as a commissioner of public health, during the prevalence of a bad fever. For several days, toward evening, I observed this cemetery to be covered with a cloud of white smoke. M. RANCHER, one of my colleagues, and myself, went to see the state of these graves, and were soon struck by a sharp infection. After having ascertained the deficiency of earth, I hastened into the air, but M. *Rancher* persisted in examining some vaults, in which were laid some of his acquaintance; he was suddenly seized with headache, which never left him; this was followed by ataxic fever, which cost him his life seven days after our fatal visit.—A compact mass of substances may remain a long time apparently inert till moved; it is the same when some coffins are touched, which seem to present nothing dangerous.

It is impossible to say how long the putrid fermentation may go on, and we should suspect this in dead bodies, till every part but the bones is entirely decomposed and reduced to mere earth.

Gravediggers have lost their lives by giving some blows with a spade on coffins containing bodies buried in the earth ten or twelve years before; and it cannot be doubted, after a great number of facts on this point, that the effluvia from these victims added force to the cause of their disease, the putrid gases.*

* See the article *Méphitisme*, in the *Dictionnaire des Sciences Médicales*.

M. CHAMBERET, one of the editors of this Dictionary, has the following remarks on endemic diseases.—Agreeably to these views of the subject, it is easy to see that the causes of endemic maladies are not beyond the reach of human power; that with the information which time has furnished, and a desire to be useful, we may succeed in destroying several of these causes, in modifying others so as to deprive them of activity, and thus in relieving the people from the common sources of depopulation, degradation, and wretchedness. Much has been already effected in this way, during the last half century, in several civilized states, and especially the improvement of the means of health, which has been made in London and Paris.

By this improvement has been accomplished a notable diminution of some diseases, and a total disappearance of others, which were common formerly in the first of these cities, and a remarkable extension of the average duration of life in the second.

These results are manifest proofs of the immense advantages, which would be secured from a general adoption of these local means of health.

The same author says, that many diseases arise from morbid exhalations, which emanate, in certain circumstances, from stagnant water—from wet and low grounds—from putrefying vegetable and animal matters—and even from men in health, when they are crowded together in ill-ventilated places. These disorders are to be prevented by a strict observance of those principles of general salubrity, and of those rules of medical police, which have been consecrated to this subject by the laws of the most celebrated nations of antiquity, and by the institutions of their philosophers and legislators.

The application of these principles and regulations has brought to light and established certain facts, which deserve

all our attention, because they demonstrate, that these tragic diseases are to be combated by preventive, rather than by curative methods.

Some light may be thrown on the nature of putrid exhalations, by attending to what occurs in hospitals and dissecting theatres.

Treating of the danger from dissecting human bodies, M. PEREY, an eminent French scholar and physician, reports the following facts.

Dr. CHAMBON, having occasion to demonstrate some parts of the human structure to the ancient Faculty of Medicine, on a subject already putrescent, on opening the abdomen there issued a vapor horribly fetid, which repelled his assistants, and particularly struck the demonstrator, who stood firm in his place.

M. CORION, a medical student, fell down faint, was carried to his lodgings, and survived but seventy hours.

M. FOURCROY, who was also a sufferer, was preserved in all probability by numerous inflammatory eruptions on his skin.

Two other young gentlemen were affected, Messrs. LAGUERENNE and DUFRESNOY; these remained a long time in a languid state, from which the latter never fully recovered.

Chambon himself escaped with an attack of fever, which happily terminated in copious sweating.

This event recalled to the narrator an occurrence at Dijon, in 1773.

A coffin, containing a body which had been buried six weeks, was accidentally broken open. Of one hundred and twenty persons who were near the grave, one hundred and fourteen were made sick by the putrid gases which arose from it; and of this number, eighteen individuals perished!

Several persons died suddenly at Montmorency, in the midst of the infectious emanations from an old coffin dug up by a gravedigger, who wished to put a new one in its place. It is needless to add what happened on removing the cemetery of the Innocents in Paris, where, among other victims, THOURET contracted a fever called malignant, which threw the Royal Society of Medicine into great anxiety for some days. The sufferer was one of the most zealous and learned members of the Society, and he afterward became the honor and support of the Faculty, and whose memory they will never cease to cherish and to bless.

It is said that CLAUDE PERRAULT died after dissecting a camel in a corrupt state, and that TARIN suffered the same fate after demonstrating on some putrid human bodies.

We may add to these losses, the young and unfortunate BICHAT, whom our wishes and regrets would have recalled to life, could we have restored him as he was, and seen him advance with increasing splendor beyond the reach of those putrid effluvia and macerations, to which he exposed himself with too little precaution.

I could name also a number of medical pupils, whose premature death can be attributed to nothing else than dissections and anatomical pursuits. But these dangers and disasters are not confined to anatomists; the former still exist, and the latter may occur to all who are exposed to putrid effluvia, and who are physically or morally predisposed to suffer from them.

Happily these accidents are of rare occurrence in the large and public hospitals and anatomical theatres of Paris, where every cadaverous fragment is speedily removed, copious washing is daily used, and the greatest attention paid to cleanliness. We cannot say the same for the theatres of some private demonstrators, which could

hardly be in a worse state. Here the bodies are kept too long on hand, the places are confined, and almost all the causes of infection are concentrated to put at hazard the health of the neighboring inhabitants, and particularly that of the pupils, who pass many hours in these places.—Attending the sick in the hospitals is far more dangerous than an attendance in the anatomical halls.

Thus, of one hundred young men, who began to visit the hospitals, sixty were seized with hospital fever. This happened notwithstanding the use of the acid fumigations, and every other precaution to preserve health.

But what is most formidable in dissecting, is the poisonous effects of a slight wound, or crack in the skin, which is made by the dissecting knife, or otherwise, so as to apply the putrid solid or fluid material to the wound.

Dr. *Chambon* relates his own case. He pricked a finger with the sharp point of the sphenoid bone of a human head, which had long been macerating; severe pain soon followed, with an inflammatory swelling of his fingers and hands, and a number of acute and distressing symptoms, which he compared to the most violent gout, and to which he was led to attribute an arthritic affection, which kept him for three years on the border of the grave. In 1810 Dr. C. experienced a similar accident, which arose from his dissecting a mortified lamb's head, with an excoriated spot on the end of one of his fingers.

Two days after the finger became excessively painful, with all the appearance of approaching gangrene.

After eight days of great suffering, the disease yielded to the remedies applied.

In 1786, M. CORVISART wounded a finger in examining a dead body; the whole arm was soon swelled enormously; DESAULT found it requisite to make deep incisions into the

distended limb, which the patient bore with firmness, though he had lost the hope and almost the desire of recovering, a circumstance which added more to the affliction of those, who saw his deplorable situation, than all the other ravages which the inoculated virus had produced. At length the talents, assiduity and friendship of the surgeon who attended, succeeded in restoring to health one who soon held a rank among the first physicians of his age.

These obstinate and frightful symptoms do not always follow an accident of this sort.—I knew a young student, who cut his finger in dissecting a subject that had been too long kept, who died in three days after, in a distressed and feeble state, without pain, attended with a mortification of the whole arm.

Wounds like these have sometimes occasioned death in still less time than this; and it is believed that Professor LECLERC lost his life in thirty-six, others say twenty-four hours, after having felt, with an excoriated finger, the pulse of a patient ill of malignant fever, in a state of perspiration. This probably arose from an immediate absorption through the pores of the skin.

To prove that this septic and deleterious matter of infection may become fatal in either of these ways, M. *Chambon* reports on the testimony of several historians, and on the faith of President DE THOU, that the Peruvians, animated by a just vengeance against the Spaniards, steeped their arrows in the putrid blood of their slaughtered companions, to make the wounds they inflicted more surely and promptly mortal. M. HUZARD says that a number of students in the French veterinary schools have suffered in like manner, in consequence of being wounded while dissecting horses and other animals.

The following extract from REES' Cyclopædia, the reader may find more diffusely expressed under the word *Putrefaction*.

In burying grounds the decomposition of animal bodies is four times as slow as when the same bodies are exposed to the air. It is not perfectly ended, according to M. PETIT, till three years after the body has been interred, at the depth of four feet, the period varying according to different soils and climates. The process is slower as the body is laid deeper in the earth.

The decomposition is favored by the waters, which filter through the earth, and dissolve and carry with them the juices, and soft solids of animal bodies. It is also favored by the absorption of the earth. The several principles of bodies absorbed by the earth, or rising in vapors, are dispersed through a great space, imbibed by the roots of vegetables, and gradually decomposed. This is what passes in burying grounds in the open air; but it is very far from being applicable to the sepulchres in churches and covered places.

Here is neither water nor vegetation, and consequently nothing to dissolve and carry away the animal fluids: and we cannot but applaud the wisdom of government, which has prohibited the burying in churches—a practice which was once a subject of horror and infection. The accidents which have happened, continues the author of this article, at the opening of graves and vaults, are but too numerous, to render an apology necessary for our speaking a few words respecting the method of preventing them. The decomposition of a body in the bowels of the earth can never be dangerous, provided it be buried at a sufficient depth, in a proper place, and the grave be not opened before its entire decomposition. The depth of the grave ought to be such that the external air cannot penetrate it;

and that the exhalations which are developed should not be capable of forcing the earthy covering which detains them.

The pernicious custom of allowing a single grave to families, more or less numerous, ought therefore to be suppressed; for in this case, the same grave may be opened before the time prescribed. These are abuses which ought to occupy the attention of government; and it is time that the vanity of individuals should be sacrificed to the public safety. It is likewise necessary to prohibit burying in vaults, and even in coffins. In the first case, the principles of the body are spread into the air, and infect it; in the second, the decomposition is slower and less perfect.

If these precautions be neglected; if the dead bodies be heaped together in too confined a space; if the earth be not proper to absorb the juices, and decompose them; if the grave be opened before the entire decomposition of the body; unhappy accidents will undoubtedly be produced; and these accidents are but too common in great towns where every wise precaution is neglected.

An instance of this happened when the ground of the church of St. BENOIT, at Paris, was dug up a few years ago: a nauseous vapor was emitted, and several of the neighbors were affected by it. The earth that was taken out of this grave was unctuous, viscid, and emitted an infectious smell. Messrs. MARET and NAVIER have left us several similar observations. CHAPTAL's Chem. Vol. III.

The two following cases seem to prove, that the danger arising from putrid gases is not confined to the warmer part of the year.

In Italy all persons, who can afford it, are buried in coffins, in the vaults. These vaults are opened by means of a flat stone in the church itself. In the hot months, in

those churches where the vaults are old and badly secured, and where burials are frequent, the stench is sometimes so great, that the service is omitted. The poor, in Rome, and all who die in charitable establishments, are thrown into pits, naked and without coffins. I went to see these pits on the second day of January, one of the coldest and clearest days of the whole year. Nevertheless, when the flat stones that covered the pit, just fourteen inches square, were removed, the putrid vapor arose so instantaneously, and in such thick fumes, that even the attendants moved towards the door of the cloister, till the first and most pestiferous exhalations should have passed. In the first pit there had been no deposits since the French revolution, and it then contained only a small quantity of bones—green, moist, and mostly decayed. In the second, in which there had been no burials for seven months, there was a great mass of putrid flesh; but not a body or limb, or any form or shape whatever, could be discerned: an accumulation of one hundred and twenty-two bodies, rotting, ulcerated, marked with white-bluish spots and streaks of black. As the putrid air gradually escaped, a faint sound could be heard, and the mass of corruption was observed to sink down deeper in the pit. In the third pit there were men, women, and children, and as the mass rotted and consumed, they sunk and mixed together—a deadly yellow color, and a thick dirty sweat seemed to pervade and spread itself over the whole heap—a cold, sluggish oozing, mingled with the slow, silent progress of putrefaction. I saw no living creature in this vault—neither worm, rat, nor tarantula. A large torch, burning with a full blaze, expired instantly, three times, on being put into the mouth of the pit. Such is Christian burial!*

* See Lyman's Italy, Chap. 17.

Who would wish to see renewed a scene like this, or to do any thing that would necessarily recall it to the imagination? Can there be any thing in a spectacle like this that one could wish to remember or contemplate? Can a church thus foul and infectious be entered without disgust and horror? Can any physical or moral advantage arise from this shock to the senses and imagination, even if health and life were not involved in the question?

The sepulchral vaults of the principal church of Dijon being full, *in the winter* of 1773, and the ground of the cemetery being too deeply frozen to be broken up, an order was given to evacuate these vaults. Some lime was thrown into these receptacles of the dead, in the belief that this precaution would render them safe, though no opening was made for the escape of the putrid gases.

The infection soon became so insupportable, that it became necessary to shut up the church.

A variety of methods were adopted to destroy or counteract these putrid vapors, without success; they soon extended to the neighboring houses, and were speedily followed by the symptoms of infectious fever.

The progress of this disease was checked by the acid fumigations, directed by L. B. GUYTON MORVEAU.

Sig. *Piattoli* says it is well known, that the people of Rome do not repair to the church of St. LORENZO IN LUCINA, without the greatest reluctance. In this church bodies are every day deposited, and from it they are frequently removed. This is the case with some other large churches in different quarters of the city.

Some years ago the small-pox prevailed in Rome: the mortality was so great, that the civil and ecclesiastical authorities united in prohibiting any further burials in the parish churches; and during the prevailing sickness every

one was buried in the church of St. MARY, at a distance from the city. After the endemic ceased, this church was paved anew, the walls were fresh plastered, a foot below the surface, and divine worship was not performed in it till the bodies were entirely consumed.

As some people seem to doubt whether the same causes will produce in America the effects which always follow them in Europe, it seems expedient to record a few events which have occurred in our own country.

The yellow fever prevailed at Brooklyn, N. Y. in 1809, with sufficient evidence of its local origin from filth, chiefly from putrid vegetable and animal substances. All this is clearly pointed out in Dr. RODGERS' letter to DEWITT CLINTON. The shorter letter of Dr. SMITH on this subject, I present the reader, merely to show him what a neglect of cleanliness and putrid materials are capable of doing in our own country.

Both these letters may be seen in the thirteenth volume of the New York Medical Repository.

From Dr. E. F. R. Smith, to Dr. J. R. B. Rodgers, Health Officer, relative to Brooklyn, November, 1809.

A good deal of rain fell early in the month of June ;— about the 19th it began to grow warm, and from this time to the 29th, the mercury stood higher than it did afterward through the whole summer. About this time the fever broke out, certainly under circumstances very favorable to domestic origin. For though, from the situation of Brooklyn, and from the size of the place, we should not expect to meet with many sources of miasmata, (morbific exhalations,) yet the fact was, that nuisances of every de-

scription abounded, and at a time, too, very favorable to noxious exhalations. I shall not rest satisfied with mere general assertions of the filthiness of the streets, though these were very dirty, but shall proceed to point out the particulars which came under my inspection. About midway between the old and new ferries, there is a lane, which comes down the hill obliquely. This lane is very crooked, and in some parts comparatively low, so that there are many obstructions to the draining off of water, though on the side of a hill.

It is occupied chiefly by small houses and stables, and not being a public place, there was no destruction or removal of perishable substances, however great the quantity. Accordingly, at different distances up this lane, there were small heaps of animal and vegetable matter, thrown from the adjoining houses, and many of them in a state of putrefaction. The stables were very dirty and very offensive to the smell, so that in walking up this street, the senses were continually annoyed. But however abundant filth might be here, it was comparatively very little to what might be found lower down. At the foot of the lane is a wharf, on which are situated a number of small houses, and among the rest four of wood, particularly deserving of notice. Here was to be found the great source of disease: for being situated on a flat, at the bottom of a hill, all those substances that escaped from above, were washed down, and here accumulated in a stagnant heap. Not only the wharf and street were very dirty, but the cellars of these houses were receptacles of filth subsiding from above. One of them I inspected narrowly, and such a mass of putrid matter as was collected in the cellar, I never before saw.

It had long been unoccupied, and from its low situation it was constantly filled with water. Here were to be

found animal and vegetable substances of every description, collected in a great mass, and constantly covered with water.

The fermentative process was so perceptible to the eye, that the surface was covered with bubbles, continually bursting and emitting a gas intolerable to the smell. The slops of the house were thrown into the cellar, and every other nuisance of a sailors' boarding house was here deposited. You can readily conceive that thousands of poisonous vapors might exhale from this cellar, and that not only a small village but a large city might be infected by such a cause.

But this was not the only source of morbid exhalation. The cellars of the adjoining houses, I was informed, were nearly as bad as this; and from their external appearance, I could readily believe it. For they were on the same level, and the houses above were occupied by the same class of people. But, moreover, in the rear of these houses, at the distance of a few yards, is a distillery. This is in a very low situation, and so conscious was the proprietor of the filthiness of his, that on asking some questions relative to his recovery, for he had had the fever, and what he supposed to be the cause of it, he directly assured us that there was no dirt about the distillery, and that we need not seek for any other cause than importation. But on inspection we found he kept a number of swine, which were fed from the gleanings of his stillhouse, and that an immense mass of filth lay directly below their pen. This was very offensive, and annoyed the whole neighborhood. Thus then, if we combine these various sources of miasmata, and consider that they were all found nearly in the same place; and if to these we add the filth taken from an adjoining dock, and deposited on the wharf nearly about the same time; and, further, if we advert to the fact,

that the disease originated in and was almost entirely confined to this neighborhood ; I think we need not seek further for the cause, but may rest satisfied that in this instance at least our own country is to blame for the production of this pestilential fever.

I am, Sir, yours, &c.

EPHM. FITZ R. SMITH.

This fever was doubtless of home manufacture and domestic origin, as yellow fever has been at various other times and places in our country. Nothing less ought ever to be expected from so shameful a neglect of the most indispensable and obvious means of preserving health.

If it were proper to make the attempt, it would not be difficult, in any summer of ordinary heat, to raise a yellow fever even so far north as this place ; but in every year, excepting now and then one of very peculiar and malignant constitution, it would be easy to prevent yellow, or any other infectious fever.

What occasioned yellow fever in Boston in 1798 ? I apprehend it arose from inattention to local cleanliness, in concurrence with a bad atmosphere. There is something in the character of certain seasons, which we can neither control, nor, at present, understand : but we do know that this predisposition, arising from the influence of the air, is not ordinarily sufficient to produce disease, still less an endemic disease, without the cooperation of some local exciting cause. This local cause, whenever and wherever the yellow fever has appeared in the United States, has been infection,—that is, the effluvia ascending from masses of filth—from putrid animal and vegetable substances.

If this view of the subject is just, what obligation can be more clear and imperious than that of keeping the city clean ?

One fact is sufficient to establish the truth of this estimate of the origin and propagation of yellow fever,—it has never been possible for this terrific scourge of our populous seaports to spread or continue in a pure atmosphere; hence it is always endemic and never epidemic; that is, a disease more or less prevalent in a limited space, and never extended over a whole continent.

It is the belief of the family of the late Mr. JOSIAH BRADLEE, who died of yellow fever in Boston, in 1793, that he took his sickness and death from inhaling the fetor from a barrel of putrid fish, which was thrown into Oliver's dock, near his place of business. The physician who attended Mr. B. concurs in this opinion.

The following case is recorded in the eighth volume of the Hist. Coll. 1st Series, p. 201.

"In Provincetown, Mass. in the year 1794, a fever proved very mortal. It is supposed to have been occasioned by a number of sharks, which were left to putrefy on the shore near the town. At present the inhabitants appear to be attentive to remove such disgusting objects out of the way."

The natural situation of this place is remarkably healthy.

Some years ago a man was killed by accident in Orange, New Hampshire. In about ten weeks after the burial, the body was taken up, to be deposited in a different place. Twenty persons were present at the disinterment of the corpse, which was in a putrid state. Thirteen of these persons fell sick of fever not long after their exposure to the putrid gases from the dead body, and several of them died. There was no other assignable cause for this fever than these noxious gases, the season and the place being otherwise quite healthy.

Nearly thirty years ago, a fever prevailed in a part of the town of Newburyport, attended with the loss of several

lives, arising, as the physicians and people believed, from a large mass of the offal and fragments of fish, which were cleaned on a wharf near the centre of this disease. This quantity of animal substance had become intolerably offensive.

In the first volume of the N. Y. Medical Repository, New Series, there is a valuable communication from Dr. I. BALL, from which the following extracts are taken.

“MR. HENRY GRIFFIN returned from attending the funeral of a Mr. PATTEN in New York, August 19, 1810, whose body was deposited in the public vault of the New Dutch Church. He declared that he was never so sensible of a cadaverous feter. So offensive was the effluvium extricated from the dead bodies, that he, with many others, was obliged to retreat from its mouth. In depositing a corpse under another church, the sexton gave to the attendants this friendly caution: “Stand on one side—you are not accustomed to such smells.” We have the testimony of the sexton of the Dutch Church, who has frequently remarked, that in descending into vaults, candles lose their lustre, and that the air was so *sour* and pungent, that it stung his nose like pepper-dust. This being the case with all vaults where dead bodies are deposited, and subject to be opened at all seasons, renders this method of disposing of the remains of our friends an unpleasant, and certainly a dangerous one. A few bodies, nay a single one, is sufficient to produce those deleterious and destructive vapors, which may bring instant death to some, and sickness to hundreds.

“The accumulation of dead bodies in this way, in large cities, *has been a frequent source of pestilence.* This fact is of the greatest notoriety. The Carthaginians owed their defeat, in many instances, to pestilential diseases. These arose in some instances from putrid vapors issuing

from uncovered graves or vaults. This was particularly the case when they destroyed the tombs around Agrigentum, then containing two hundred thousand inhabitants. The direful pestilence exhaling from those mounds of putrefaction, being volatilized by intense heat, swept off not only great numbers of the Carthaginians, but many of their enemies, and also their general.

“RENDER, in his tour through Germany, relates, that one week after the interment of a corpulent female, in July, within the chancel of a church, such an intolerable fetor was extricated, as to sicken sixty out of one hundred and eighty communicants, who had attended the service of the church for the purpose of receiving the Holy Eucharist; many of whom died in the most violent agonies. Suspicion was alive to inquiry for the cause of this sudden and unexpected disease, and consequent deaths. Many persons were arrested for having, as was alleged, communicated to the consecrated elements some deleterious ingredients. By further investigation, the mischief was attributed to a dead and putrefying body. Four men were employed to open the grave and coffin. Two of them dropped down and expired on the spot; the other two were only saved by exertion of the best medical talents. It is beyond the power of words, says *Render*, to express the horrid sight of this corpse. When the coffin was opened, the whole was an entire mass of putrefaction, and it was clearly demonstrated that the effluvia which had issued from the body had caused the pestilential infection, which a week before had been attributed to poison.

“The celebrated chemical philosopher, BEEKER, observes that “the first vapor that arises from a cadaver, is subtile and nauseous; some days after, it has a *sour* and penetrating smell; after the first week the skin becomes covered with a down, and appears yellow; greenish spots

are found in various parts, which afterward become livid and black: a thick, mossy or mouldy substance covers the greater part of the body; and the spots afterward emit a sanies."

"My correspondent, Dr. R. of Jamaica, West Indies, relates the following circumstances:

"Many years since, a fracas happened between two youths, while at school in England. One of them, the son of an opulent planter, fell by the knife of his antagonist. His body was removed in a leaden coffin to the mausoleum of his father, in the parish of Westmoreland. On repairing the ancient sepulchral edifice, a carpenter of an inquisitive mind bored a hole through the leaden casement, whence instantly issued a most noxious effluvium, which stupified him for some time, and nearly proved fatal. About the year 1792, an unfortunate duel took place between two gentlemen in the same parish. One of them fell by a ball's piercing his heart.

"His body was buried in a mausoleum built for the purpose, on his estate. Of so elastic a nature were the gases emitted from the decomposing body, that they burst asunder the wooden and leaden casements, and so offensive was the feter, that the family were obliged to retreat from their mansion, which was in the vicinity. The plumbers, employed to solder the leaden coffin, were forced to desist, and leave the work unfinished, notwithstanding their repeated attempts. The facts recorded in ancient and modern history attest with great conviction the fatality which has attended the opening of sepulchral habitations.

"Within the circle of a few years, many melancholy facts are related by *Fourcroy*, who was appointed director for the removal of the dead bodies from the cemetery of the Innocents' Church in Paris. A number of the grave-diggers were killed on the spot, by the noxious vapors

emitted from the tombs. If any results, says Dr. Ball, are deducible from these facts and observations, it strikes me that the following should be forcibly inculcated. 1. That to inter the dead within the precincts of a city, is dangerous to the health of its inhabitants. 2. That the fashionable method, practised in this place, of consigning the dead to vaults, to be repeatedly opened, is still more dangerous."

NOTE OF THE EDITORS.

"The Editors feel happy to tender their thanks to its author, for introducing to the attention of his fellow-citizens a subject, to which, we are sorry to say, they are unaccountably indifferent. It is not long indeed since we have seen, in this populous city, the mangled remains of the dead transported from one burying-ground into the other. We have also seen two church-yards opened, and deeply broken on extensive spaces, leaving exposed to our reluctant and pensive curiosity, shattered limbs of corpses and their decayed coffins, till they were closed again by a range of brick vaults. They extend now a great way into the streets, far from what may be called the *consecrated* ground of the church, and literally under the pressure of a thousand horses, carts, and carriages. An earthquake might in an instant throw up from under our feet, the stings of death, the poison of human putrefaction, and create unexpectedly horrid scenes and cruel contrasts,—to punish the present generation for not having removed afar off these fetid cells of human decomposition, in which they themselves will not be better protected against the overturning hand of time, and other natural causes. It is well known that our large cities having within a few years extended much beyond their former suburbs, it has been

necessary in many instances, to build on what was formerly a burying-ground, to expel, as it were, the dead for the accommodation of the living.

“And by whatever alterations or improvements future generations may, in the progress of time, violate or destroy the existing vaults, is very obvious to every reflecting mind, who must be convinced of the vanity of choosing a resting place, the habitation of their dust, in the middle of a crowded city, rather than in a distant and appropriate spot of ground. To the authorities and arguments offered against the evils and dangers of our mode of sepulture, many more might be added from other learned writers, who have professedly and impressively inquired into the subject.

“One only we will mention, and the most recent work of the celebrated *Vicq-d'Azyr*, of Paris, Physician to the late Queen of France, and the translator of the Italian Essay of *Scipion Piattoli*. We find in this production, the eloquent pastoral address of the Archbishop of Toulouse, against the same practice, which this Prelate deprecates with the authority of many ancient Fathers of the church, of Christian Roman Emperors, of Councils, of Popes, and many other ecclesiastical regulations.

“We feel it our duty to recommend a reading of this instructive piece to those who might not be averse to the abolition of sepulture in populous cities, were they not withheld by piety, or by a cherished sense of union hereafter with their forefathers, their friends,—with the blessings and prayers of their church.”

An Extract from Dr. Samuel Akerly's Letter to Mr. F. D. Allen, dated New York, Oct. 12, 1822.

“DEAR SIR,

“I AM pleased to learn that you are about to publish a collection of facts, to show the impropriety of interments

in cities; whence the conclusion may be drawn, that the practice pursued in New York of burials in and near our churches, and in the heart of our population, may produce, if it has not already produced, injurious consequences to the health of our city.

“The modern practice of human sepulture in cities, has been found so pernicious in Europe, that various methods have been resorted to, for the purpose of counteracting or preventing a renewal of the evil consequences which have resulted.

“A committee of the board of health made a report in 1806, in which this subject of interments, among other means to improve the healthiness of New York, was particularly noticed. The committee consisted of Dr. EDWARD MILLER, Mr. JOHN PINTARD, and Mr. WINANT VAN ZANDT, jun. Their report was dated 22d January, 1806, and is among the records of the board of health. This report, having been approved, was sent with a memorial to the legislature, and was instrumental in causing a law to be passed, authorizing the corporation of New York to prohibit interments in the city. This law was afterwards incorporated with a general law respecting New York, and probably had some effect in causing several religious societies to purchase ground in the suburbs for the burial of their dead. From the rapid and progressive increase of the city, these will soon be in the centre of a great population, and may hereafter endanger the health of the neighboring inhabitants. The law appears to have been but partially operative, and now remains a dead letter; but its provisions may yet be put in force for the benefit of the city.

“Many persons cannot bring themselves to believe, that burying-grounds have any agency in *producing* sickness; yet it is almost universally admitted, that an impure state of the atmosphere, caused by these or other masses of putrid

matter, greatly aggravates the malignity of yellow fever, when it does exist. Those who do not consider this disease contagious, think a foul atmosphere from local causes sufficient to create it ; while, on the other hand, those who consider it an *imported and contagious disease*, admit that it is *contagious only* in an impure atmosphere, which exalts its terrors and gives it wings to fly.

“Can the neighborhood of Trinity church-yard be otherwise than the cause of sickening exhalations? Can any one believe that it is safe and healthful to live near such a place? If the evil is not corrected, this cemetery will be injurious to health at all times except in the months of frost, and hereafter its malignant influence may show itself earlier in the season. Depend on it the property in that part of the city will be greatly injured and depreciated, unless something effectual is done. It may be asked, what proof have we of its sickening influence, and why has it not before caused similar mischief? To this it may be answered in general, that the cup must be full before an addition will make it overflow. But this same burying-ground emitted pestilential vapors during the revolutionary war, the recollection of which is not obliterated from the memory of a number of living witnesses. In the hard winter of 1780–81, this city was in possession of the enemy, and the ground was so frozen that the soldiers and others, who were buried there during that long and severe winter, were interred but a small distance beneath the surface. The consequence was, that in the ensuing warm season, it became so offensive as to require the interposition of the military commandant, and the Hessian soldiers were employed in covering the whole ground with a fresh stratum of earth two or three feet thick.

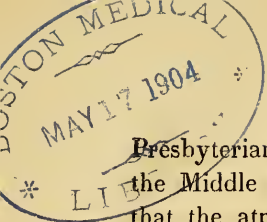
“During the present season it has been remarkably offensive ; and the malign atmosphere began to annoy pas-

sengers in Broadway, Rector street and Lumber street, before the yellow fever commenced, in July. The first exhalations which arose from it appeared to descend along Lumber street and Rector street, in the lower ground in and about Greenwich street, where they mingled with effluvia arising from other masses of putrefaction. As the season advanced, the increase and continuance of heat caused them to extend their influence, and diffuse the seeds of disease and death into other parts of the city. You will have some idea of the strength of these effluvia from Dr. Roosa's letter to me, dated 1st October, 1822. He says,

“On the night of the 23d September, I covered Trinity church-yard with fifty-two casks of quick-lime, and the stench arising from thence was so excessive as to cause several of my laborers to vomit freely, though the process of slaking the lime was going on rapidly. The smell was *great in every part* of the yard, but the most offensive part was *in the rear, and where it adjoins Lumber street and Rector street*. On the 25th and 26th, I covered St. Paul's church-yard, and the vaults of the North Dutch Church in William street, corner of Fulton. *The latter was also very offensive.*”

“I am since informed by the same authority, that the vaults of the Presbyterian Church in Wall street, near Trinity Church, also emitted offensive smells, as well as those of the Middle Dutch Church, corner of Liberty and Nassau streets, and the vaults of some other churches where there are not so many buried. St. Paul's church-yard emitted unpleasant effluvia, but not so bad or concentrated as those of the other burying-grounds.

“If these facts are taken in connexion with the cases of yellow fever which have occurred in the immediate vicinity of these places, as those in Lumber street and Broadway, near Trinity Church; those in Wall street, near the



Presbyterian Church ; and those in Liberty street, near the Middle Dutch Church ; the conclusion must follow, that the atmosphere contaminated by the putrid exhalations from the grave, has at least aggravated the symptoms of the disease, if it has not generated it. If the yellow fever was imported, it has propagated itself by means of this contaminated atmosphere ; and if it was not imported, the putrid miasmata arising from grave-yards, and other sources, have given it a domestic origin. In either case, it becomes us to correct these sources of corruption, and prevent similar occurrences."

"In January, 1806, *John Pintard*, Esq. and Mr. *Winant Van Zandt*, jun. with the late Dr. *Edward Miller*, were appointed a committee from the board of health, to consider and report what preventive measures were necessary to secure the health of the city of New York : Accordingly, Dr. *Miller* drew up a very able and interesting report on the subject, which was accepted ; and the following extract will show the opinion of one of the first scholars and most able physicians in the country, on the subject of interments within the city :—

" ' *To the Committee of the Board of Health, &c. &c.*

" ' REPORT :

" ' That interments of dead bodies within the city, *ought to be prohibited*. A vast mass of decaying animal matter, produced by the superstition of interring dead bodies near the churches, and which has been accumulating for a long

lapse of time, is now deposited in many of the most populous parts of the city. It is impossible that such a quantity of these animal remains, even if placed at the greatest depth of interment commonly practised, should continue to be inoffensive and safe. It is difficult, if not impracticable, to determine to what distance around, the matter extricated during the progress of putrefaction may spread, and by pervading the ground, tainting the waters, and perhaps emitting noxious exhalations into the atmosphere; do great mischief. But if it should be decided still to persist in the practice of interments within the city, it ought to be judged necessary to order the envelopment of the bodies in some species of calcarious earth, either quick-lime or chalk. The present burial-grounds might serve extremely well for plantations of grove and forest trees, and thereby, instead of remaining receptacles of putrefying matter and hot-beds of miasmata, might be rendered useful and ornamental to the city. This growing evil must be corrected at some period, for it is increasing and extending by daily aggregation to a mass already very large; and the sooner it is arrested, the less violence will be done to the feelings and habits of our fellow-citizens.' ”

“ Malignant Disease caused by a Dead Body.

“ Martin’s abridgment of the Philosophical Transactions, (vol. 9. p. 212,) contains the case of Mr. Cox, surgeon at Peterborough, who tapped the abdomen to draw off the dropsical fluid remaining there, of a woman a few hours after death, and was nearly killed by the poison of it. The included humors had reached to so violent a degree of corruption as to discolor the external parts with a green and livid hue; and on flowing through the *silver canula*

deeply corroded it. On every spot where the least portion of this moisture had fallen, about the hands and fingers, angry pustules arose which festered and broke ; some of them healing soon afterwards, and others continuing very painful, and ending in universal convulsions and great oppression of the vitals. The septic vapors which arose from this poisonous fluid were so subtile and malignant, that some of Mr. Cox's assistants, who were in the chamber only, and did not touch a drop of the fluid, were very much disordered, and afterwards had red and livid spots on their skins. This is a decided case of the local origin of pestilential fever from the vapors of a fluid which deeply corroded silver."

"Pernicious Effects of putrid Effluvia.

"In the neighborhood of the street of La Lingerie in Paris, there was a burying-place where the dead were interred from twenty-four parishes, and wherein, amongst others, in the year 1779, fifteen or sixteen hundred dead bodies had been interred in a very deep excavation. The consequence was, that in the year 1782, the cellars under the adjoining houses were poisoned, insomuch that no candle would burn therein, and the persons who ventured to enter them were threatened with suffocation, and other bad symptoms. This was naturally to be expected ; but remarkable and new it is, that the moisture on the inner walls contained such a terrible poison as scarcely may be found throughout nature. A mason happened to touch the moisture with his hand, and in three days after, the hand, with the arm, was very much swollen, with great pain ; blisters appeared, and the whole of the skin came off."

"Fatal Inoculation.

"In the winter of 17—, MM. DE LA CAZE, VASSELOT, MEQUESEL, and the son of a rich merchant of Lyons, dissected a dead body. The young man, not being very expert in the use of the scalpel, wounded himself slightly under the nail. His whole hand swelled, and the arm became very painful. M. DESAULT, a celebrated surgeon, was consulted. He applied cataplasms, liniments, fomentations, frictions, but in vain: medical skill was in vain opposed to a mortal inoculation; and the poor young man, an only son, who had embraced the profession from his ardent love of science, died at the end of seven days.

"This account is communicated to us by M. *de la Caze*, an operator equally modest and distinguished, chief surgeon of the hospital of Beaujon; and recalls to memory the death of the celebrated *Leclerc*, who perished by a similar accident, equally regretted.

"Thus far the editor of the *Gazette de Santé*: the application to our subject is easy. If a minute portion of animal putrefaction, received into the system by inoculation, is thus fatal; what effect must be expected from the gaseous exhalations of our immense reservoirs of putrescency? our church-yards, so crowded that bodies, scarcely decomposed, are of necessity removed to make room for new tenants? Why should we look abroad for the causes of a malignant endemic, when, in addition to the effluvia arising from our streets and gutters, we have so long inhaled the pernicious gas arising from our crowded cemeteries?"

"Trinity Church-Yard.

"WE, whose names are hereunto subscribed, certify, that before and during a part of the time of the preva-

lence of the late yellow fever in New York, we resided in the neighborhood of Trinity Church burying-ground; that we were frequently annoyed with the offensive effluvia arising from the said burying-ground, and particularly so when the wind swept over its surface before reaching us. The stench was sometimes so powerful as to oblige many of us to shut the doors and windows of our stores and dwellings, to keep out the disagreeable and sickening smell.

JOSEPH BREWSTER, 102, Broadway.

LEMUEL BREWSTER, 102, do.

WILLIAM GALE, 104, do.

RICHARD McKENSIE.

THOMAS B. & A. STOKES, 1, Wall street.

CHARLES WILEY, 3, do.

W. B. GILLEY, 92, Broadway.

HENRY I. MEGAREY, 96, do.

E. MILLON, 104, do.

CLARK, PELLETREAU, & UPSON.

WILLIAM BULL, 2, Wall street.

“ ‘*New York*, 2d Nov. 1822.’ ” *

“ *Pestilence, or Yellow Fever, from Human Ordure.*

“ In the fourth volume of the Medical Repository of New York, is a letter from Dr. JOHN VAUGHAN, of Wilmington, in Delaware, to the late Dr. *Edward Miller*, relating the following extraordinary and instructive facts.

“ ‘ In the summer of the year 1783, M. FAURE, a merchant of Narbonne, Lower Languedoc, in France, bought

* Seven other names are signed to similar certificates.

a house which had previously been occupied as an anatomical hall ; and being desirous of having a cave dug in the cellar, employed three men to do it. In digging, they came to the wall of a necessary, which had been the common receptacle of the remains of human subjects, (bodies dissected) and which was covered, to prevent detection ; and on extracting a few of the stones with their picks, an offensive putrid matter rushed through the aperture, and suffocated them. *M. Faure*, going to see the workmen, descended but two or three steps before he fell senseless. The neighboring people, who were struck with the putrid smell, went to the house, and of nine that entered to bring out the sufferers, six died. *M. Faure* was removed, but died in four days ; and the unfortunate laborers survived their release but a day or two.

“ ‘ In the mean time the smell increased to such a degree as to create a pestilence, and the neighbors were obliged to remove ; but a great many of them died. The mayor of the city, being informed of the circumstance, had the cellar filled up and the house closed. But the malignant effluvia pervaded the town ; and a great many died of the *pestis*, (pestilence, or plague.) The disease was attended with black vomit ; but not communicated by contagion.

“ ‘ The writer of this article, *Mr. P. C. VARLE*, lived with the former owner of the fatal house during the calamity ; and was accurately informed of the state of the poisonous privy ; and was attentive to the progress and nature of the disease.

“ ‘ This (continues *Dr. Vaughan*) is the most decisive fact I have met with on the origin of pestilence. The circumstances of the case preclude all cavilling, and must be admitted as conclusive.’ ”

“POTTERS’ FIELD.

“*The following important Fact is communicated to me by
Major General ——— of this City.*

“In the year 1814, a battalion of militia from Dutchess County was assigned to General ———’s command. They were quartered on a lot on Broadway, the rear of which bounds upon Potters’ field. The major commanding the battalion waited on the general one morning, and stated to him that the men of his corps, who were in tents in the rear of the house, were a great portion of them affected with complaints of the bowels, accompanied with fever, and that some were very ill. He added, that they supposed that the burying-ground in the rear affected their health; for that the sentinels on duty in the night were assailed at times *with most deadly effluvia, coming from the direction of the Potters’ field.* The major added, that himself and all those quartered in the house enjoyed perfect health.—The general, supposing that the exhalations from the grave-yard were injurious to the health of the troops, directed their immediate removal to Greenwich.—One of the sick died; the rest recovered immediately; and the whole detachment remained in perfect health during the remainder of their tour of service.”*

But New York has now, 1823, prohibited the practice of domestic interments! Thanks to those humane and

* Documents and Facts, &c. Published by F. D. Allen. New York, 1822.

courageous individuals, who, in opposition to the wrong-headedness of some of the *Faculty*, and the habit and prejudices of many of the people, have effected this salutary improvement.

Since this auspicious beginning, we will yet hope that a lustral year is about to come, or has already commenced, when this City, so much favored by nature, shall be cleansed,—her atmosphere purified, her health secured, and her reputation brightened.

If the remains of our friends are suitably disposed of, the natural processes of decomposition may go quietly on, without any annoyance or injury to survivors. Every thing is good which nature ordains; and even putrefaction, if we did not officiously on the one hand attempt to prevent it, or, on the other, suffer it to go on in improper places, would be not only innocuous, but attended with some advantages.

By this decomposition of animal and vegetable bodies many substances are dissipated, which by their accumulation would encumber and deform the surface of the earth.

The same process contributes also in its turn to the formation of many pleasing and useful productions of the vegetable and animal kingdoms.

A friend to church interments expresses the following sentiments on this subject.

“The most objectionable mode of burying dead bodies in large towns is in graves, especially if the same ground is allowed to be dug up more than once. Since, at length, the ground becomes saturated with animal substance, so that, when it is opened in hot weather, the most offensive exhalations are produced. Another objection to burying in graves is, that the rain, which falls on the graves and distils through the earth, carries with it more or less of the

animal substance, and renders the water more or less impure."

This statement is not the representation which the public want for their information and direction.

It blends two things together, which should be kept separate,—namely, the place and the mode of interment. For these cannot, with justice, be united, and then both be blamed or both commended,—because one happens to be very good, and the other very bad. The truth is, that depositing the dead in graves is the best mode of interment which has yet been practised, and none need be better; this mode fulfils every reasonable desire and wish of the living, both in relation to themselves and their deceased friends. If graves ever do any harm, it is because they are put in the wrong place, or because they are opened too soon; it is always the fault of the living, not of the mode of interment. What is here said against city inhumation is very just, and even more might be said without exceeding what time and experience have confirmed. The city grave-yard is here chiefly accused of injuring water, whereas, beside this, it has frequently occasioned sickness and death. On one point I differ entirely from this representation,—that graves in cities are more pernicious than tombs under churches. We are not called to visit the former every week; they do not so often annoy our senses, nor ever drive us from church: while the latter are in no respect less dangerous than the former. But fortunately we are not called on, in this instance, of two evils to take the least; the call is to prevent or remove both, without stopping to decide which is the worse.

A writer in *Rees' Cyclopædia* says, the infection by which our endemic fevers are propagated, is generated in three ways;—by the confinement of the healthy animal exhalations in a crowded and ill-ventilated place;—still

more readily by the confinement of morbid effluvia, though the disease be not originally infectious ; and, thirdly, by the exhalations from putrefying animal matter. Infection occasionally originates from the putrid effluvia of animal and vegetable matters. Thus it often happens that typhous fever spreads itself over the adjacent country, when the dead are left unburied on the field of battle. SENAC gives an account of a malignant fever, excited by the offal of a city being accumulated without the walls.

It was received into a ditch filled with water, and while it was covered with the water, was not attended with any bad consequence ; but when the quantity increased, so that it rose above the surface, a dreadful fever spread through the city and its neighborhood, so that, where four hundred used to die annually, the deaths were increased to two thousand. WILSON on *Febrile Diseases*.

As Catholic countries have suffered more than any others from domestic interments, it ought to be mentioned, to the honor of the Catholic Church, that her spirit has always resisted this innovation on her former and purer discipline.

The councils held in various parts of the Catholic world from the tenth to the eighteenth century, give incontestable evidence of this fact. The following councils all opposed, more or less directly, this fatal custom.

One of Ravenne, held under GILBERT, and then under SYLVESTER II. in 995 ; the sixth of Winchester, in 1076 ; the famous synod of Toulouse, in 1093, in which it was agreed to make two cemeteries, one for the bishops and the great seigniors, and the other for the common people ; a council of London, held in 1107 ; one of Cognac, in 1255, and 1260 ; one of Bude, in 1269 ; one of Nismes, in 1284 ; one of Chester, in 1292 ; one of Avignon, in 1326 ; one of Narbonne, in 1551 ; one of Toledo, in 1566 ; one

of Mechlin, in 1570. We have also committees of the clergy of France, assembled at Melun in 1579; a synod of Rouen, in 1581; one of Reims, in 1583; one of Bordeaux and of Tours, in the same year; one of Bourges, in 1584; one of Aix, in 1585; one of Toulouse, in 1590; another of Narbonne, and one of Bordeaux, in 1624: all giving on this point the same precepts, and admitting the same doctrine. This is not the place to recount the canons adopted by these councils. Several of them prohibited the sale of sepulture. One canon of the synod of Rouen forbade church inhumation, with certain exceptions in favor of some worthy ecclesiastics, and a few persons of rank, or eminent virtue; *Cæteri religiosè in cæmeteriis tradantur*. With more or less exceptions, all these councils and assemblies discountenanced the practice of city and church interments.

I have thus attempted, without method, because nearly as they came to hand, to lay before the public a number of facts and records, which some may think important, perhaps decisive—against domestic interments. The greatest difficulty has been to avoid selecting too much from the mass of history on this subject, which almost any one may command. If more facts and evidence however should be deemed necessary to convince any, who are willing to be convinced, of the inconveniences, the annoyance, the impropriety, the danger, and the fatality of church and city inhumations, they shall, in some form or other, be made known. Some of the sources of this information may be seen in the catalogue of books and authors at the end.

It only remains now to provide a suitable resting-place for the material part of such of our friends and predecessors as have gone before us, *without* and *beyond* the living city,—and to suggest one or two motives to induce every one to prefer this salutary reform to existing abuses.

It will naturally be asked, If the remains of the dead are not to be deposited within the City, what provision is to be made for their reception?

Such provision must indeed be made; and it can with great convenience be made ample, satisfactory, and appropriate.

The cemetery at New Haven may serve as a model, to be improved by any amendments which genius or experience can suggest.

The Rev. Dr. DWIGHT has given the following description of this cemetery. "The original settlers of New Haven, following the custom of their native country, buried their dead in a church-yard. Their church was erected on the green, or public square; and the yard laid out immediately behind it, in the northwestern half of the square. While the Romish apprehension concerning consecrated burial places, and concerning peculiar advantages, supposed at the resurrection to attend those who are interred in them, remained, this location of burial-grounds seems to have been not unnatural. But, since this apprehension has been perceived by common sense to be groundless and ridiculous, the impropriety of such a location forces itself on every mind.

"It is always desirable that a burial-ground should be a solemn object to man; because in this manner it easily becomes a source of useful instruction and desirable impressions.

"But, when placed in the centre of a town, in the current of daily intercourse, it is rendered too familiar to the eye to have any beneficial effect on the heart.

"From its proper, venerable character, it is degraded into a mere common object; and speedily loses all its connexion with the invisible world, in a gross and vulgar union with the ordinary business of life.

“ Beside these disadvantages, this ground was filled with coffins, and monuments, and must either be extended further over the beautiful tract, unhappily chosen for it, or must have its place supplied by a substitute. To accomplish these purposes, and to effectuate a removal of the numerous monuments of the dead, already erected, whenever the consent of their survivors could be obtained; the Honorable JAMES HILLHOUSE, one of the inhabitants, to whom the Town, the State, and the Country, owe more than to almost any of their citizens, in the year 1796, purchased, near the northwestern corner of the original town, a field of ten acres; which, aided by several gentlemen, he leveled and enclosed. The field was then divided into parallelograms, handsomely railed, and separated by alleys of sufficient breadth to permit carriages to pass each other. The whole field, except four lots given to the several congregations, and the College, and a lot destined for the reception of the poor, was distributed into family burying-places; purchased at the expense actually incurred; and secured by law from every civil process. Each parallelogram is sixty-four feet in length, and thirty-five feet in breadth. Each family burying ground is thirty-two feet in length, and eighteen in breadth; and against each an opening is made to admit a funeral procession. At the divisions between the lots, trees are set out between the alleys: and the name of each proprietor is marked on the railing. The monuments are almost universally of marble; in a few instances from Italy; in the rest found in this and the neighboring states.

“ A considerable number are obelisks; others are tables; and others, slabs, placed at the head and foot of the grave. The obelisks are placed, universally, on the middle line of the lots; and thus stand in a line, successively, through the parallelograms. The top of each post, and the railing,

are painted white ; the remainder of the post, black. After lots were laid out, they were all thrown into a common stock. A meeting was then summoned of such inhabitants as wished to become proprietors. Such as attended drew for their lots ; and located them at their pleasure. Others in great numbers have since purchased them ; so that a great part of the field is now taken up. It is believed that this cemetery is altogether a singularity in the world.

“ I have accompanied many Americans, and many foreigners into it ; not one of whom had ever seen or heard of any thing of a similar nature. It is incomparably more solemn and impressive than any spot of the same kind, within my knowledge ; and, if I am to credit the declarations of others, within theirs.

“ An exquisite taste for propriety is discovered in every thing belonging to it ; exhibiting a regard for the dead, reverential but not ostentatious, and happily fitted to influence the views and feelings of succeeding generations.

“ At the same time, it precludes the use of vaults, by taking away every inducement to build them.

“ These melancholy, and, I think I may say, disgusting mansions, seem not to have been dictated by nature ; and are certainly not approved by good sense. Their salubrity is questionable ; and the impression left by them on the mind transcends the bounds of mourning and sorrow, and borders, at least, on loathing.

“ That families should wish to be buried together seems to be natural ; and the propensity is here gratified. At the same time, a preparation is in this instance happily made for removing, finally, the monuments of the ancient burying-ground, and thus freeing one of the most beautiful squares in the world from so improper an appendage.*

* These monuments were removed in July, 1821. *Pub.*

“To this account I ought to add, that the proprietors, when the lots were originally distributed, gave one to each of the then clergymen of the city. On the whole, it may, I think, be believed, that the completion of this cemetery will extensively diffuse a new sense of propriety in disposing of the remains of the deceased.”*

A cemetery like this, in our vicinity, would probably prevent the inducement to bury any longer in our city and churches, and prepare the way for a removal of the contents of those tombs, which are already sending forth no equivocal admonitions into some of our temples. New, appropriate, and satisfactory receptacles for these remains might be given by the city, in exchange for the space and property now occupied, and any other equitable compensation for the rights and property of individuals.

And thus, in due time, when the next or some succeeding generation shall feel and think it proper, the sepulchral emblems, and monuments, and bony relics of our present misplaced city burying-places, might all be transferred to an ultimate, an uninterrupted, and an unoffending repository,—where the dead would indeed be at rest.

If it should any where be found inconvenient to devote so much space to the dead as this mode of interment seems to require, this inconvenience might be obviated, as in some places it has been, in this manner.

After the decomposition of every part of the body, excepting the bones, has been completed, these more durable remains have been taken from the graves and put into a large cave or pit, made for this purpose, in the middle of

* In April, 1815, this cemetery was enlarged by the addition of a considerable piece of land lying on its western border; and is now of sufficient extent to furnish family burying-grounds on the original scale for a long period.

the cemetery. In this way the graves may be occupied in succession by recent corpses. If coffins were made of perishable wood, and with moveable sides, to be taken away at the time of burial, the grave might, with safety, be emptied and replenished every four or five years, perhaps oftener—the time to be decided by experiment, as this varies according to circumstances. Where this mode is adopted, the grave need not be more than four feet deep. Or, if it should be thought preferable, the bones might be burnt, and the ashes only preserved in a common receptacle; or be blended with its parent earth.

Is there any more wisdom, or philosophy—filial piety or humanity—public or private utility, or religion—in enclosing in iron, stone, or lead, a putrescent human body—as if forever there to remain unchanged—than in treating a similar and equal mass of any other animal matter in the same way? Is it not rather to counteract the constitution and course of nature, as if we were wiser than their Author?

Had it not been the design of the Author of nature, that the human body after death should be subject to all the changes and transformations, to which other animated systems are liable, would not provision have been made for the prevention of what we know to happen every hour?

If it be said that no one expects or wishes to prevent the natural decay of the human body by hermetically sealing it up in some imperishable material; I would then ask, what rational, or beneficial purpose is to be effected by this interference? How useless is the art of making mummies! perhaps there never was but one that ever did any good, and this is now exhibiting here for the support of a hospital and a dispensary. This indeed is well; and how much better it is than to defile the living with the effluvia of the

dead. The latter part of a late address to a mummy is worth repeating.

“Statue of flesh—immortal of the dead !
 Imperishable type of evanescence !
 Posthumous man, who quit’st thy narrow bed,
 And standest undecayed within our presence ;
 Thou wilt hear nothing till the judgment morning,
 When the great trump will thrill thee with its warning.
 Why should this worthless tegument endure,
 If its undying guest be lost forever ?
 O let us keep the soul embalm’d, and pure,
 In living virtue, that when both must sever,
 Although corruption may our frame consume,
 Th’ immortal spirit in the skies may bloom.”

It would undoubtedly be wiser, and more profitable and successful to attempt to imitate the virtue of some pure departed spirit, than to endeavor to render imperishable his mortal remains. Is there any reason to believe that the ever-living soul has any more connexion with the lifeless remains of the man, than with any other equal portion of that earth from which it was taken ?

All analogy leads to a negative conclusion. Other animal and vegetable productions, after the vital action has ceased, are decomposed, and again become a part of that mass of matter, from which they were organized,—prepared, in the course of those operations which are incessantly going on in the great laboratory of nature, to become other animals and vegetables.

This connexion may exist in the thoughts and feelings of the living, but we have no authority for supposing it to extend beyond the grave. If the perished body is to be restored, it must be done by an act of creative power, and therefore to believe that human intervention is to have any

influence in the case, is to suppose that human agency can interfere with the purposes of the Almighty.*

It appears therefore, on any rational view of the subject, that SENECA's idea is just, "that sepulture was instituted rather for the benefit and safety of the living, than on account of any advantage to the dead."

To the latter we owe a respectful and undisturbed repose; to the former, so far as we can command them, a pure element for respiration, and good health; and it is grateful to feel that the two objects are not only compatible, but that both can be conveniently accomplished at the same time, merely by depositing the dead, *without tombs*, in a well-located, and well-constructed cemetery.

The following extract is from a discourse lately delivered from the pulpit.

"By ourselves, then, the place where our habitation of dust shall have fallen and decayed, will probably be disregarded, if it is not unknown. But with those who shall be left behind us, it will not be so. In the bosom of the living an interest is excited in any spot when it is viewed as the resting place of the dead. The folly, the vanity, the pride of man have done much indeed to destroy this interest; to silence all that is eloquent in the grave, and to neutralize all that is holy in the air around it. The natural feeling of reverence for the house of the dead is lost, when there is a departure in it, from the simplicity of nature. Even the *tomb* is not so interesting as the *grave*. It savors of pride, in those who are proud no longer,—of distinction, where all are equal. And how vain are these ensigns of magnificence! What though a sepulchral lamp

* St. PAUL has sufficiently settled this question in the 15th chapter of his first epistle to the Corinthians. See MACKNIGHT's Commentary and Notes.

pour its red light on the walls of the vaulted chamber where my dust reposes. This dust would rest as quietly were there no lamp there. It fears nothing: no dreams disturb it. It will not mark the neglect should the flame be suffered to expire; it will not complain should it never be lighted again.

“In this dust, what is there lovely to those who loved me in life? What is there venerable in the eyes of my posterity? The children of my children may summon the courage to descend into the still abode, and gaze by torch light on the black and mouldering visage, which, not their memory, but the testimony of the pencil or the chisel,—not their *love*, but their pride—may tell them is that of their ancestor.

“This may indeed eloquently remind them how soon the builder of the house of death must take up his abode within it! how soon the dust that we *have* must mingle with the dust that we *are*! but there is a shuddering, a feeling of horror in the atmosphere of the tomb, that chills all that is delicate and tender in the emotion that leads them into it. Though my father and my mother sleep there, I retreat from the tomb the moment that I can do it without impiety, or even with decency. But I am differently affected when with the rising sun, or by the light of the melancholy moon, I go alone to my mother’s grave. There I love to linger; and while there I hear the wind sigh over one that often sighed for me. I breathe an air refreshed by the herbage, which draws its strength from the source whence I drew mine; and in the drops of dew that tremble on its leaves, I see the tears which so often bedewed her eyes as she breathed forth a prayer that her children might cherish her memory, and escape from the pollutions of the world. Yes, to the lover of nature in her simplicity, the grave is more interesting than the tomb.

“ And if the spirit, on leaving its earthly dwelling, do not lose all interest in its crumbling tenement, would it not rather see the child of earth clasped again to the sweet bosom of its mother, to be again incorporated with its substance, to become again the theatre of beauty, the medium of enjoyment, the recipient of light ; that it should again assume a form attractive and lovely ; than that it should lie and moulder away in darkness and silence, the source of disgust to strangers, and of terror to those whom we may still love ?

“ Let vanity adorn the marble tomb
 With trophies, rhymes, and scutcheons of renown,
 In the deep dungeon of some gothic dome,
 Where night and desolation ever frown.
 Mine be the breezy hill that skirts the down,
 Where a green grassy turf is all I crave,
 With here and there a violet bestrown,
 Fast by a brook or fountain’s murmuring wave,
 And many an evening sun shine sweetly on my grave.”

“ The Christian doctrine of a future life, and even of the resurrection, does not oppose the train of thought in which we have now indulged, and which seems naturally to pass in the mind of one who observes the revolutions and changes in the natural world, and at the same time watches the emotions of his own heart, when he meditates on death, and rises, in imagination, into his hospitable dwelling. For though we regard death as but the introduction to another state of being, and consider the grave as only a dark passage to a brighter world ; yet, in this other world we know not now what we shall be : but we do know that what ‘ is sown a natural body is raised a spiritual body, and that flesh and blood cannot inherit the kingdom of heaven.’

“ We also know, and it is enough for us to know, that if we have performed our duties here, we shall be prepar-

ed for something more pure and more elevated in the state to which the immortal part of us shall be transferred; that there we shall find ourselves as perfectly adapted to our state as we are here; for the same wisdom can, and the same goodness will fit us for our future, that has fitted us for our present sphere of action and enjoyment. And we believe that there new and inexhaustible evidences will be presented to us of that wisdom and goodness; and that in them we shall find new and inexhaustible sources of our own happiness."

A sort of table or contrast might be formed, somewhat like the following, showing on the one side, what is right in motive, and desirable in effect; and on the other, what is bad in cause, or hurtful in consequence; leaving every one to take his choice.

MOTIVES.

REASON.

A respect for the sincerity, modesty and simplicity of nature.

A preference of suitable and appropriate arrangements and expenses.

The admission of a union between physical and moral purity.

SUPERSTITION.

The pride of society, and a love of distinction where nature makes none.

A love of show, extravagance, waste of property in funereal parade, and expensive sepulchral monuments.

An implication that moral and religious purposes are best, or at least as well, effected in an impure, as in a pure, atmosphere.

Being influenced by a desire to promote a pure air and good health.

Attachment to a partial custom, destructive of good air, inviting disease and death, without any possible compensating advantage.

CONSEQUENCES.

Salubrious air, pleasant prospects, fine health, sufficient space to move in, ample scope for every beneficial, and even ornamental purpose within the city.

Infectious air and water, noisome spectacles, limited space and bad arrangements in the streets and squares of the city. Health disregarded, and life endangered for a worthless accommodation of the dead.

IN REGARD TO THE DEAD.

Quiet and secure repose, where the processes of nature and the intentions of Providence can go on and be completed without interruption, and without abridging the enjoyments, or shortening the period of human existence.

An insecure place of rest, subject to the fluctuations and derangements of living society.

The picture is, I trust, not too highly drawn to be true and just ; but if I am deceived in this matter, I shall be perfectly willing, so far as truth will permit, so to adjust the balance as to meet the views and wishes of the warmest advocate for domestic interments.

But the author has no theory to propose but that of truth ; no cause to plead but that of human life with its blessings and enjoyments. He wants no temple in order to find a grave. If he can but deserve the epitaph of SIMON PETER,* he will be content to be buried alone, or by the side of others,—like ARISTIDES, in a field ; like HOMER, on the border of the sea ; like LYSANDER, on a plain ; or like any body else, who has been buried without parade, and without a tomb, at such a distance from his survivors as not to contaminate the air they might breathe, or the water they might use. He will be satisfied with any plan which shall give—SECURITY TO THE LIVING, WITH RESPECT AND REPOSE FOR THE DEAD.

* Simon Pierre, vir, pius et probus,
 Hic sub dio sepeliri voluit,
 Ne mortuus cuiquam noceret,
 Qui vivus omnibus profuerat.

An American Translation, or Paraphrase.

Here lies,
 Under the pure and breezy skies,
 The dust
 Of *Simon Peter*, the devout, the just,
 Doctor of Medicine.—
 At his request
 He sleeps in earth's sweet wholesome breast,
 Rather than in a noisome cemetery,
 Under a church where all the *great* they bury.
 'Twould be, he said, a sin
 Past all enduring,—
 A sin which to commit he was unwilling,—
 Should he, who, while alive, got fame and bread,
 The sick by curing,
 Entirely change his hand, and go, when dead,
 The well to killing.

SOME OF THE BEST WRITERS ON THE PLACES AND DANGERS
OF INTERMENTS.

Alexander ab *Alexandro*, in genialibus diebus.

Lud. Cælius, in Lectionibus antiquis.

Lilius Gregorius Gyraldus, de Sepulchris et vario sepeliendi ritu.

Thom. Porcaccius, Dialogues sur les Funérailles des Anciens.

Joannes Meursius, de Funere.

Claud. Guichard, sur les Sépultures des Anciens.

Joh. Kirchmannus, de Funer. Romanorum.

Jacob. Guthenius, de Jure Manium.

Onufrius Panvinius, de Ritu sepeliendi mortuos apud veteres Christianos, et eorundem cœmeteriis.

Gueill. Bernard, de Sepulturis et Exequiis.

Henricus Spondanus, Cœmeteria sacra.

Jac. Gretserus, de Fun. Christian.

Anton. Bosius, de Româ subterraneâ. This work and that of *Tho. Porcaccius*, are written in Italian.

ON BURYING IN CITIES AND CHURCHES.

Christ. Gottfr. Hoffman, Diss. de cœmeteriis ex urbe tollendis; Franc. 1629.

And. Riveti, Epistola in qua mos cadavera mortuorum in templis sepeliendi redarguitur. Lugd. Bat. 1636.

Nimpisch, Diss. de Sepulchris ad viam publicam, &c. &c. Lipsiæ, 1721.

Alberti, Diss. de Sepulchrorum salubri translatione extra urbem; Hal. 1743.

Coschwiz et Erlich, Diss. de morte ex sepulchris seu de noxis ex sepulchris in templis oriundis; Hal. 1728.

Math. F. Alix, De nociva mortuorum intrâ sacras ædes urbiumque muros sepultura; Erf. 1773.

Maret. Mémoire sur l'usage où l'on est d'enterrer les morts dans les églises et dans les enceintes des villes. Dijon, 1773.

Mémoires sur les sepultures dans les villes, ou Recueil des pièces concernant les cimetières de la ville de Versailles; Versailles, 1776.

Observation sur l'établissement d'un cimetière général hors de la ville de Lyon; Lyon, 1776. &c. &c.

The following articles in the *Dictionnaire des Sciences Médicales*, will afford the reader much valuable information on this subject, viz.—

Dissection. Epizootie. Fosse d'aisance. Gaz. Hygiène. Infection and Inhumation.

The Reader is desired to correct the following Errors.

Page 10, for Modina, read Modena.

„ 14, bottom, for putrifying read putrefying.

„ 15, l. 12, for the coffin, read a coffin.

„ 17, l. 17, for they, read it has.

„ 17, l. 24, for adds, read add.

„ 19, l. 5, after the word that, add, the effluvia from.

„ 53, l. 22, for gaceous, read gaseous.

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